Corporate Governance and Corporate Performance: Some Evidence from Newly Listed Firms on Chinese Stock Markets

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Abstract:

This paper is concerned with some corporate governance issues related to newly listed firms in China based on a sample of 329 firms commencing listing on Shanghai Stock Exchange (SHSE) and Shenzhen Stock exchange (SZSE) during the period from 1998 to 2000. We first investigate the impact of ownership change due to stock market listing on corporate performance. We consider four aspects of corporate performance: profitability, sales, leverage and employee productivity. Our research results indicate that, on average, profitability, sales and employee productivity have improved from pre-listing to post-listing. We further investigate the impacts of state majority control, foreign ownership and regulation effects on corporate performance. Overall, this paper provides some new evidence on the listing effect, ownership structure and regulation effect on Chinese firms which will be valuable to the future reform of state owned enterprises in China.

Key Words:- State owned enterprise, corporate governance, and corporate performance.

1. Introduction

Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment (Shleifer and Vishny, 1997). Corporate governance is a set of mechanisms that assure suppliers of finance get a return on their investment. Bai et al (2002) classify the mechanisms into two types: internal mechanisms which include factors such as the board of directors, executive compensations, ownership structure, financial transparency and adequate information disclosure, and externals mechanisms which include the market for caproate control, legal infrastructure and protection of minority shareholders, product market competition.

The concept of corporate governance has developed over the past several decades primarily in developed market economies. However, the recent experiences of corporate scandals such as the Enron, Worldcom in the US, Parmalat in Italy and HIH in Australia have cast much doubt on the existing corporate governance system and mechanism in the Western countries. These scandals have helped to raise the public awareness of corporate governance and called for higher governance standards in the West. Corporate governance development is now recognised as essential to the successful transition to an efficient market system (Lin, 2001).

Corporate governance has also gained unparallel importance in China since market reforms began in 1978 (Bai et al, 2002). The Shanghai Stock Exchange (SHSE) and Shenzhen Stock exchange (SZSE) have been established in the 1990s and now China's stock markets have become the eighth largest in the world with market capitalisation of over US$500 billion. One important aspect of improving corporate governance in China is the privatisation. Many state owned enterprises (SOEs) have been successfully listed on the Chinese stock markets.

This paper aims to investigate some issues related to the corporate governance by using data on 329 newly listed firms in SHSE and SZSE. Ownership change is one important internal corporate governance mechanism. We first examine the impact of ownership change due to stock market listing. We then address the impact of state majority control, foreign ownership and regulation effects on corporate performance around the listing period. The state control and foreign ownership factors are part of the internal mechanisms of corporate governance. In contrast, the regulation factor is one of the external mechanisms of corporate governance. Obviously, there are many corporate governance factors which can be considered. However, due to the data availability, we only consider these three factors: state majority control, foreign ownership and regulation. We shall investigate the impacts of these factors on performance in three cases: pre-listing, post-listing and pooled data.

There are a few existing studies on the performance changes due to privatizations. These include Megginson et al. (1994), Boubakri and Cosset (1998), Dewenter and Malatesta (2001), D'Souza and Megginson (1999) and D'Souza et al (2001). More recently, Sun and Tong (2003) evaluate the performance of 634 state owned enterprises (SOEs) listed on China's two exchanges upon privatisation in the period 1994-1998. We follow the methodology employed in these studies to consider the listing effect on corporate performance. However, the firms in our data commenced listing between 1998 and 2000. Thus our data are more recent compared to Sun and Tong (2003). We shall compare our results on the listing effect with Sun and Tong (2003).

A few papers on corporate governance in China exist in the literature. Xu and Wang (1999) investigate whether ownership structure has significant effects on the performance of publicly listed companies in China and in what way it does. It is found

that ownership structure indeed has significant effects on the performance of stock companies in China. Chen (2001) examines the cross-sectional relation between ownership structure and corporate performance of a sample of 434 manufacturing firms listed on the Chinese stock exchanges. Qi et al (2001) investigate whether and how the corporate performance of listed Chinese firms is affected by their shareholding structure by using a sample of firms listed on SHSE from 1991 to 1996. Our study is different from these studies as we focus on the newly listed firms and we investigate the possible changes in the corporate governance mechanism due to stock market listing.

The reminder of this paper is organised as follows. In Section 2, we describe the data and the methodology for the study. Section 3 presents the empirical results. In Section 4, we summarise the key findings of this study.

2. Data and Methodology

In this paper, we seek to determine whether the stock exchange listing of Chinese firms is truly desirable and lives up to the expectations of the governments and development agencies for the performance of the newly listed firms. We are also concerned with the impacts of some corporate governance variables, namely, state majority control, foreign ownership and regulation. To this end, we employ two types of techniques: empirical study of the changes in performance due to listing and the regression analysis of the relationship between performance and the underlying corporate governance variables. Details of these two techniques are outlined after the data description.

2.1. Data

We follow the existing studies, in particular Sun and Tong (2003) and compare performance changes three years before and three years after listing. Similarly, we define the year of listing as Year 0. The three years before listing are labelled Year -1, -2, and -3 respectively. Likewise, the three years after the listing are labelled as Year 1, 2, 3, respectively.

Note that a new set of accounting standards in China was introduced in 1993. The new accounting standards which are closer to international norms took effect in January 1994.Thus only all financial statements after 1993 are comparable. Taking this factor into account, we select firms commencing listing from 1998 to 2000 for the purpose of this paper. Hence all data used in this paper are between 1995 and 2003. It should be noted that our data which do not overlap with Sun and Tong (2003) are more recent. There were altogether 339 firms' commenced listings in China during the sample period. After excluding some firms for which complete data are not available, we obtain a sample of 329 firms. All data are obtained from the China Stock Market and Accounting Research Database (CSMAR) prepared by the China Accounting and Finance Research Centre of the Hong Kong Polytechnic University and the Shenzhen GTA Information Technology Company.

2.2 Selection of performance variables

Before we further discuss our methodology, we need to select the performance measures for our study. We consider four aspects of the corporate performance: profitability, output, sales and employee productivity. Our choices are largely dependent on the availability of data.

- Profitability

The firms considered in this paper all went through primary offerings instead of secondary offerings. In a primary offering, the government sells existing equities and receives all of the sales proceeds and the only effect on the firm comes from ownership change. Associated with the initial listing in Chinese stock markets, a firm normally increases its asset and equity accounts by an equal amount. Besides, after the initial listings, firms are allowed to have a right issue up to 30% of outstanding stocks annually (Yu and Ying, 20001). Many firms issue new shares after the initial listing even there were no good investment opportunities. Therefore, it is common that a firm's capital and equity capital change dramatically in the years after the initial listing. Given this special situation, it is hard to use the return on asset (ROA) and return on Equity (ROE) to measure the profitability of a firm after its listing. Instead of using ROA and ROE, this paper, as in Sun and Tong (2003), employs two other measures for the profitability: real net profit (RNP) and net profit margins or return on sales (ROS).

In this paper, RNP figures are first adjusted for inflation[1], then normalised relative to the listing year where the listing year RNP is set to 1. This normalization can avoid the side effect due to the issues of new shares.

- Output

In this paper, we use the real sales (RS) figure to measure the output for each firm. The real sales are based on the accounting sales figures and adjusted for inflation similarly as for RNP. The real sales are also normalized to 1 for the year of listing (Year 0).

[1]The listing year figures are taken as the base, the figures for pre and post listing years are then adjusted for inflation accordingly.

- Leverage

We use the ratio of total liability to total asset as a measure for financial leverage. Although the validity of this measure may suffer from the dramatic capital changes due to listing[2], we do not have a better choice due to the lack of information on interest expense and cash flows before listing, we can not use other measures such as time interest earned and cash ratio etc.

- Employee efficiency

Improving the employee productivity and efficiency has been an aim for SOE reform in China. We are interested in how our sample SOEs behaved after listing in terms of employment levels and employee efficiency. To this end, we use three measures: the number of employees, the real sales per employee, and the real net profit per employee. Given that very few firms reveal their number of employees before the listing, we compare the post-listing employee figures with the listing year figures rather than the pre-listing figures.

2.3. The listing effect on performance

In this paper we mainly use the median of each performance variable to analyse the change in performance due to stock market listing. In the mean time, we also use the mean value of each variable as a reference.

To be more specific, we use the Wilcoxon signed rank test as our principal method of testing for significant changes in the performance variables. Note that we assume that the samples are independent. The Wilcoxon Z-test statistics are normal when both sample sizes are bigger than 25. This condition is easily satisfied given our total number of firms considered.

[2] We note that this is the same problem plagues the use of ROA and ROE as performance measures.

In addition to the Wilcoxon signed rank test, we also use a proportion test to determine whether the proportion (p) of firms experiencing changes in a given direction is greater than would be expected by chance (typically testing whether $p = 0.5$). Given the large number of firms considered, finding that an overwhelming proportion of firms changed performance in the same direction may be at least as informative as a finding concerning the median change in performance.

2.4. State majority control, foreign ownership and regulation effect

We consider two indicators of ownership structures in this paper: state ownership and foreign ownership. If the state ownership of a firm at listing is more than 50%, it is classified as state majority control (SML). Otherwise, it is classified as non-state majority control, which means virtually dispersed ownership in most cases. In addition, we also consider the foreign ownership factor to investigate if there are any impacts on a firm's performance due to the existence of foreign ownership in Year 0.

For the regulation factor, we classify firms in the energy, public utilities, finance and telecommunication industries as regulated and all other firms are regarded as non-regulated.

We use a multi-linear regression approach to investigate the ownership structure and regulation effect on newly listed firms on the Chinese stock markets. We shall consider three cases: pre-listing, post-listing and the pooled data[3]. The purpose is to observe the effects of these factors on corporate performance as well as any their changes from pre-listing to post-listing.

Specifically, we use the cross-sectional data to run three groups of regressions to see the relationship between firm performance and ownership structure as well as

[3] Note that the pooled data include the pre-listing and post-listing data. However, the data of the listing year are not included in the pooled data.

regulation: one regression with the prelisting data (Year -3 to Year -1) to see the pre-listing effect, one regression with the post-listing data (Year 1 to Year 3) to see the post-listing effect, one with the pooled data (year -3 to Year -1 and Year 1 to Year 3) to see the overall effect.

The regression model is as follows:

$$PP_i = \beta_0 + \beta_1 SMC_i + \beta_2 FRN_i + \beta_3 REG_i + \varepsilon_i$$

where

PP is one of the performance variables, i.e., $RNP, ROS, RS, LA.$ Moreover, SMC , REG , REV , FRN are dummy variable defined as follows.

If the state ownership of a firm exceeds 50% at listing, SMC is set to 1, otherwise 0;
If a firm has B-, N-, or H- shares[4] at the time of listing FRN is set to 1, otherwise 0;
If a firm is in a regulated industry, REG is set to 1, otherwise 0.

We note that the R squared measures of these regressions are expected to be very low as there are much more important variables such as GDP or interested rates which have more explanation powers on the performance measures than these dummy variables. However, these regressions are sufficient and useful in serving the purpose of this paper which is to observe the significance of the variables REG , REV , FRN . SMC . For the sake of simplicity, we do not use control variables as in Sun and Tong (2003), for these regressions.

Finally, it should be observed that we do not use the data for the listing year (Year 0) so that we can avoid the initial public offering (IPO) effect [5] as widely documented in the literature.

[4]Shares in China are classified as domestic (A-shares) and foreign (B-, H- N- shares) by holder's residency. For further details, see e.g. Xu and Wang (1999).

3 Empirical results

3.1. The stock market listing effect

In this subsection we consider the listing effect on performance based on the whole sample of 329 firms. The results are reported in Table 1.

First, let us analyse the profitability changes due to stock market listing. The mean (median) of the three year average real net profit has increased from 0.90 (0.74) of pre-listing to 0.99 (0.97) of post-listing. The Wilcoxon statistic is 6.3. Thus the change in RNP due to listing has been significant at the 1% level. Among the 329 firms considered, the RNP of 214 firms increased while 115 firms decreased. The binomial test also indicates significance at 1% level. Thus we can conclude that, on average, the RNP has increased from pre-listing to post listing. It should be noted that both RNP average and median are less than 1, i.e. less than the corresponding figures in Year 0. This may be due to the IPO effect and it is the reason that we exclude the Year 0 data from our analysis in this paper.

Similar trends hold for ROS measure. The mean (median) of return on sales increased from 0.18 (0.12) of pre-listing to 0.19 (0.13) of post listing. Both Wilcoxon and proportion Z-statistics indicate significant changes. Thus listing appears to have enhanced the return on sales.

The average (median) of RS increases from 0.84 (0.80) of pre-listing to 1.45 (1.37) of post-listing. Both average and median have increased significantly from pre-listing to post-listing.

[5]It is widely documented that IPO firms outperform the market after the listing (see e.g. Ritter and Welch, 2004). Also, there are normally dramatic changes in the assets and equity accounts due to listing. Hence the performance in Year 0 is rather abnormal. Thus we exclude the data of Year 0.

Compared to prelisting, The LA ratio decrease after listing. The before listing LA ratios have an average of 0.56 which decreases to 0.40. In the mean time, the median decreases from 0.60 to 0.40. Among the 327 companies considered, only 36 firms have shown an increase in the leverage ratio. The rest 291 companies all have shown a decrease in leverage. This may be due to the following reasons. Before listing, SOEs can borrow easily at a favourite rate due to the state guarantee. After the listing, the borrowing opportunity costs go up and the firm may also have more channels to obtain funds. Consequently, the leverage ratio decreases from pre-listing to post-listing.

Compared to the pre-listing years, we see the employment level has little increase after listing as shown by the average and median of employment. This observation may be explained by the expansion of businesses after the listing which can be likely due to the economic booming for the past two decades. However, the Wilcoxon statistic shows that changes are insignificant. The Wilcoxon Z -test statistic reveal that real sales per employee after listing have increased significantly from the listing year. In contract, the real net profit per employee has declined significantly from the listing year.

In summary, it is difficult for us to conclude the direction of employee efficiency changes after listing.

Table 1 Summary of Results for the sample of all newly listed firms

This table presents the empirical results for the whole sample of newly listed firms. For each performance measure, it provides the mean and median values for the three-year period before and after listing, the number of observations, and the change in mean and median values. It also provides T statistic of Wilcoxon signed ranks test for the difference in medians, the proportion of firms that performed as predicted, and Z statistic of Binomial sign test for significance of proportion Change (with large sample normal approximation and continuity correction).

Variable	Mean Before (Median)	Mean After (Median)	N	Mean Change (Median)	Z-statistics For Difference In Medians (after-Before)	Proportion of firms that performed as Predicted (%)	Z statistic for significance of proportion Change
Profitability							
Real Net Profit	0.8977 (0.7431)	0.9921 (0.9660)	329	0.0944 (0.2229)	6.30****	65.05%	5.40***
Return on Sales=Net Profit/Sales	0.1797 (0.1237)	0.1912 (0.1269)	327	0.0115 (0.0032)	4.99***	66.67%	6.03***
Output							
Real sales	0.8446 (0.8001)	1.4491 (1.3733)	329	0.6045 (0.5732)	16.13***	86.32%	13.12***
Leverage							
Total debt/Total assets	0.5649 (0.6002)	0.4001 (0.4008)	327	-0.1648 (-0.1994)	-13.74***	11.01%	-14.04***
Employment							
Number of employees	2681.86[a] (1611.00)[a]	2812.82 (1739.00)	263	130.96 (128.00)	0.87	61.60%	3.70***
Real sales per employee	9.1241[a] (6.1881)[a]	11.9621 (7.5828)	259	2.8380 (1.3964)	2.72***	77.99%	8.95***
Real net profit per employee	9.1241[a] (6.1881)	6.7355 (4.9319)	259	-2.3886 (-1.2562)	-2.69***	40.15%	-3.11***

Note: [a]these figures are from the listing year figures due to the unavailability of pre-listing data. *** represents significant at 1%.

3.2. State majority control, foreign ownership and regulation effect

In this subsection, we use the multi-linear regression model to investigate if the state majority control (SMC), foreign ownership and regulation are significant in explaining performance variables. We consider three cases: pre-listing, post-listing and pooled data.

- **Prelisting period**

Table 2 reveals that SMC has negative coefficients for the regressions with RNP, ROS and RS, though only the coefficient for RNP is statistically significant. This suggests that state majority control hurts corporate performance and it should be reduced. A similar but a stronger conclusion is obtained by Sun and Tong (2003). The positive coefficient of SMC in the LA regression implies that the relationship between state majority control and leverage is positive and weak.

The coefficients of FRN are negative for all the four regressions. However, only the coefficient in RS is statistically significant. This could be due to the following reason as suggested by Sun and Tong (2003). The firms that issue foreign shares typically have a large proportion of the total ownership of the firm in the form of state ownership. FRN appears to be negatively related to performance. Further, the relationship between FRN and leverage is slightly negative.

Regulation effect is only significant to leverage ratio. This means firms in the regulated industries tend to have lower leverage relative to their total assets. The relationship between regulation and real net profit (RNP) is negative, while the relationships between regulation and ROS as well as RS are both negative. Thus it appears that the results regarding performance and regulation are mixed and no clear cut conclusion can be drawn.

Table 2 Regression results: Pre-listing

This table presents the regression analysis on the pre-listing sample of listed firms based on the following model: $PP_i = \beta_0 + \beta_1 SMC_i + \beta_2 FRN_i + \beta_3 REG_i + \varepsilon_i$ where PP is the performance proxy. The t-statistics are in brackets, *, ** and *** denote significant at 10%, 5%, 1%, respectively.

	RNP	ROS	RS	LA
Constant	0.987	0.277	0.859	0.567
	(12.506)***	(2.833)***	(49.028)***	(91.995)***
SMC	-0.199	-0.107	-0.029	0.006
	(-1.685)*	(-0.746)	(-1.107)	(0.613)
FRN	-0.166	-0.047	-0.113	-0.016
	(-0.688)	(-0.161)	(-2.109)**	(-0.847)
REG	-0.011	0.058	0.043	-0.038
	(-0.058)	(0.25)	(0.999)	(-2.502)**
R^2	0.003	0.001	0.006	0.008
DW	1.993	2.009	1.908	2.305
OBS	987	986	987	985

- **Post listing period**

Table 3 presents the results for the post listing regressions. SMC has negative coefficients for the regressions with RNP, and RS, and positive coefficients for ROS. None of the SMC coefficients are statistically significant. This suggests that negative impact of state majority control on firm performance has reduced from pre-listing to post-listing.

FRN have negative coefficients for the regressions of *RNP* and *LA*, positive coefficients with *ROS* and *RS*. Only the *FRN* coefficient in the *LA* regression is statistically significant, indicating that firms with foreign ownership tend to have lower leverage post listing. The regression results also show that the relationship

between *FRN* and performance has moved somehow to the positive direction from the uniform negative direction of prelisting period.

The coefficients of *REG* are significant in both *ROS* and *LA* regressions. This means firms in the regulated industries tend have lower leverage relative to their total assets and higher *ROS* relative to non regulated firms.

Table 3 Regression results: Post-listing

This table presents the regression analysis on the post-listing sample of listed firms based on the following model: $PP_i = \beta_0 + \beta_1 SMC_i + \beta_2 FRN_i + \beta_3 REG_i + \varepsilon_i$ where *PP* is the performance proxy. The t-statistics are in brackets, *,**and *** denote significant at 10%, 5%, 1%, respectively.

	RNP	ROS	RS	LA
Constant	1.019	0.067	1.472	0.409
	(9.339)***	(6.110)***	(39.862)***	(59.973)***
SMC	-0.094	0.021	-0.03	0.003
	(-0.576)	(1.253)	(-0.541)	(0.321)
FRN	-0.029	0.040	0.046	-0.037
	(-0.088)	(1.176)	(0.405)	(-1.768)*
REG	0.119	0.175	-1.35	-0.068
	(0.454)	(6.556)***	(-1.518)	(-4.146)***
R^2	0.001	0.044	0.003	0.021
DW	1.964	1.794	1.573	2.019
OBS	987	987	987	987

- **Pooled data**

Table 4 presents the results for the regressions with pooled data.

SMC has negative coefficients for the regressions with *RNP*, *ROS* and *RS*, and positive coefficients for *LA*. None of the *SMC* coefficients are statistically significant. This suggests that *SMC* has an overall limited but negative impact on performance.

FRN has negative coefficients for all the r regressions. Only the *FRN* coefficient in the *LA* regression is statistically significant. This implies that *FRN* has overall negative impacts on performance and strong negative impact on leverage ratio.

Regulation effect is only significant to the leverage ratio. This means regulated firms tend to have lower leverage relative to their total assets. The impact of regulation on performance is somewhat mixed, with negative impact on *RS* and positive impact on *RNP* and *ROS*.

Table 4 Regression results: pooled data

This table presents the regression analysis on the full sample of listed firms based on the following model: $PP_i = \beta_0 + \beta_1 SMC_i + \beta_2 FRN_i + \beta_3 REG_i + \varepsilon_i$
where *PP* is the performance proxy. We use the pooled data of Year -3 to -1 and Year 1 to year 3. The t-statistics are in brackets, *, **and *** denote significant at 10%, 5%, 1%, respectively.

	RNP	ROS	RS	LA
Constant	1.003	0.174	1.165	0.488
	(14.911)***	(3.572)***	(57.798)***	(92.930)***
SMC	-0.147	-0.045	-0.029	0.004
	(-1.457)	(-0.621)	(-0.869)	(0.538)
FRN	-0.098	-0.005	-0.034	-0.026
	(-0.476)	(-0.037)	(-0.488)	(-1.641)*
REG	0.055	0.115	-0.044	-0.054
	(0.337)	(0.975)	(-0.801)	(-4.268)***
R^2	0.001	0.001	0.001	0.011
DW	1.974	2.001	1.356	1.550
OBS	1974	1961	1974	1972

In summary, our results show that there are some slight changes in the corporate governance mechanisms due to the listing event. In all three cases, it appears that regulation has a significant impact on firm leverage ratio. Foreign ownership is negatively related to the leverage ratio. SMC has a negative impact on performance

before listing and the negative impact alleviates after listing. Regulation has a strong negative relationship with leverage.

4. Summary and conclusion

In this paper, we use the data on newly listed firms on the Chinese stock markets during the period from 1998 and 2000 to investigate the impact of the stock market listing and some corporate governance factors on corporate performance. The corporate governance factors considered in the paper are: the state majority control factor, foreign ownership factor, as well as regulation factor.

Compared to Sun and Tong (2003), our study uses more recent data. Our results support that the listing event has significant impact on corporate performance. We find strong evidence for the improvement in real net profit and return on sales, real sales, as well as employee efficiency after listing. These are similar to previous conclusions in the literature. However, we also see some evidence of decrease in leverage after listing. In short, our empirical research provides significant supporting evidence for the stock market listing of Chinese firms which is part of the SOE reforms in China in the past two decades.

We also investigate the impacts of the state majority control factor, the foreign ownership factor and regulation factor on corporate performance. We see some weak evidence that the corporate governance mechanisms have changed slightly from pre-listing to post-listing. In contrast to the evidence obtained in Sun and Tong (2003), the state majority control, foreign ownership and regulation hardly show significant impact on the performance. However, our results do support that the regulation factor has significant impact on leverage all the time.

Overall, our results shed some light on the further reform of SOEs in China. Our results suggest that the stock market listing in China has been successful in terms of corporate performance. Thus the direction of SOE reform was correct and should be maintained for the future. Overall, the state majority control, foreign ownership and regulation factors have very limited impact on corporate performance. This suggests that these factors should not be a big concern for the further SOE reforms as far as corporate performance is considered. The sate majority control variable is overall negatively related to the performance measures used in this paper, thus it would be a good thing for corporate performance if the state majority control can be reduced at listing. This point is also supported by Sun and Tong (2003).

Finally, we note that one should be cautious with the interpretation of the findings in this paper. The results should be understood in a suggestive rather than decisive way as with most studies on corporate governance.

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Discussion Paper No 204, November 2005

Series edited by
Dr Steven Li

School of Economics and Finance

ISSN 1324-5910

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